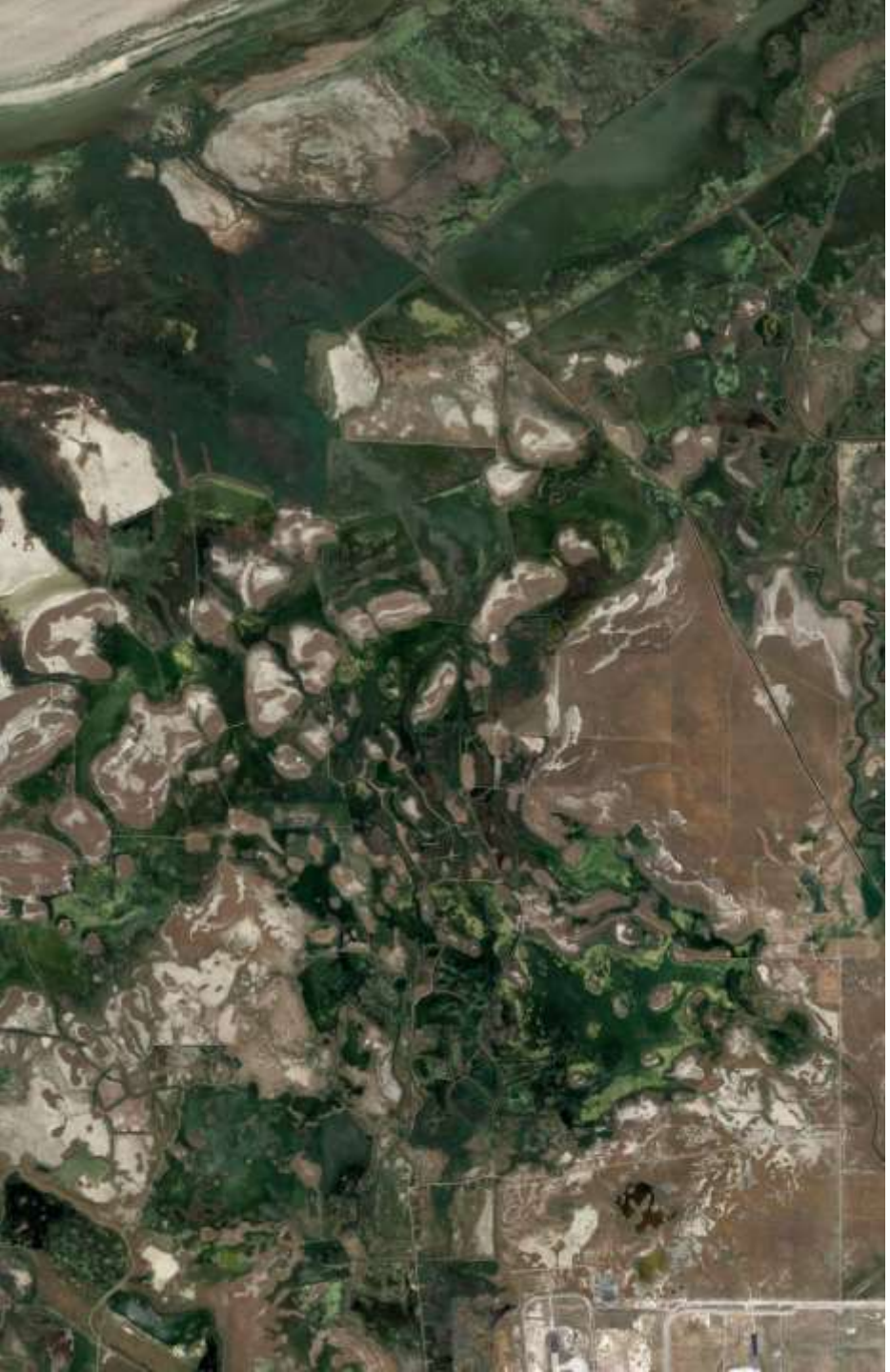


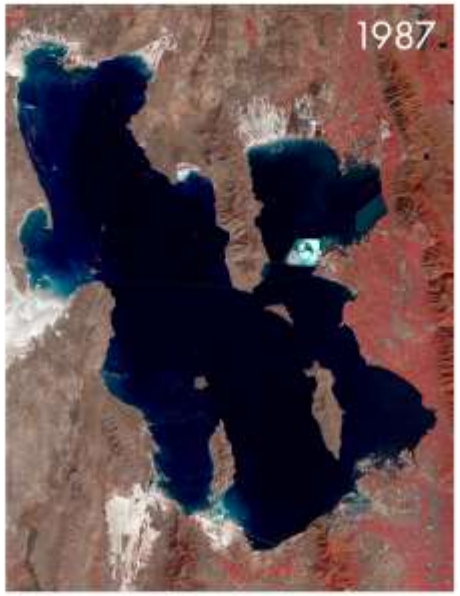
UtahStateUniversity
LANDSCAPE ARCHITECTURE &
ENVIRONMENTAL PLANNING

DESIGNING FOR MITIGATION

ON THE GREAT SALT LAKE

HOLLEY STRINGHAM

MENTOR: JAKE POWELL



The Great Salt Lake has lowered by 11 feet and decreased by 50% in area since the mid-1800's when European Settlement began


Bear River
Spiral Jetty
Willard Bay Reservoir
Weber River
Great Salt Lake
Farmington Bay
Salt Lake City


Bear River
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THE PROBLEM

CAUSES, HAZARDS, AND IDENTITY

3 IDENTITIES OF THE GREAT SALT LAKE

CAUSES

- Water Diversions
- Lack of Water Rights
- Invasive Species
- Encroaching Development
- Agricultural Waste
- Urban Waste

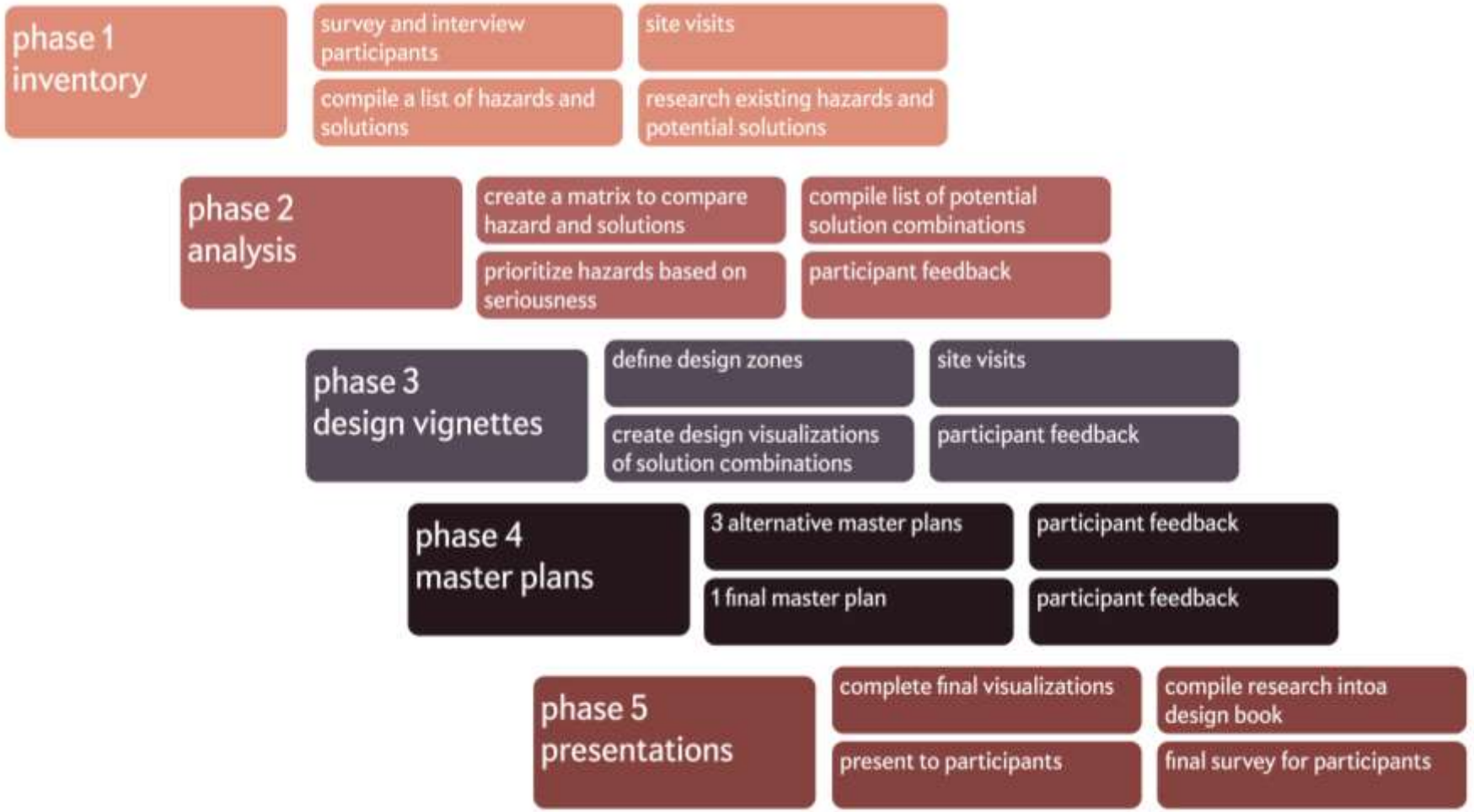
HAZARDS

- Cultural
  - Air Quality/Public Health
  - Public Perception/Education
  - Lake Smell
- Environmental
  - Wetlands
  - Threatened Migratory Birds
  - Increased Predation
- Economic
  - Loss of Industrial Revenue (Minerals and Brine Shrimp)
  - Increased Fire Risk
  - Loss of Recreational Revenue (Hunting and Tourism)

THE PROJECT

PRECEDENTS, PROJECT DESIGN, AND CURRENT PROGRESS

PROJECT DESIGN

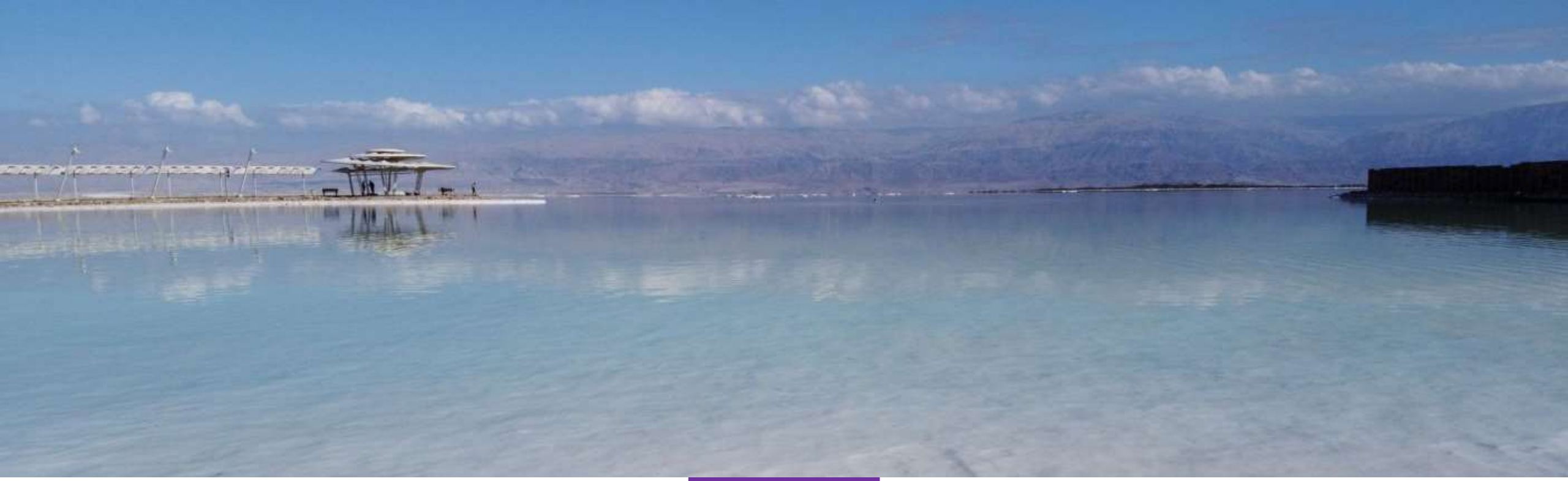


ARAL SEA

On the border of Kazakhstan and Uzbekistan, the Aral Sea has decreased significantly after water diversions for agricultural irrigation. Once the fourth largest lake in the world, the diversions have left the lake to shrink to 10% of what it was in 1960. Some efforts and funding have helped improve some areas, but there is still a long way to go as agriculture remains a staple of the local economy.

LAKE OWENS

Located outside of Los Angeles, Lake Owens because a hazardous air quality issue as its lakebed dried. Water was diverted to supply the Los Angeles aqueduct, drastically affecting the lake. California has spent billions on dust mitigation, including lakebed terraforming, pipe trenches, and managed vegetation techniques. Improved conditions for dust storms and the local ecosystem have already been reported.



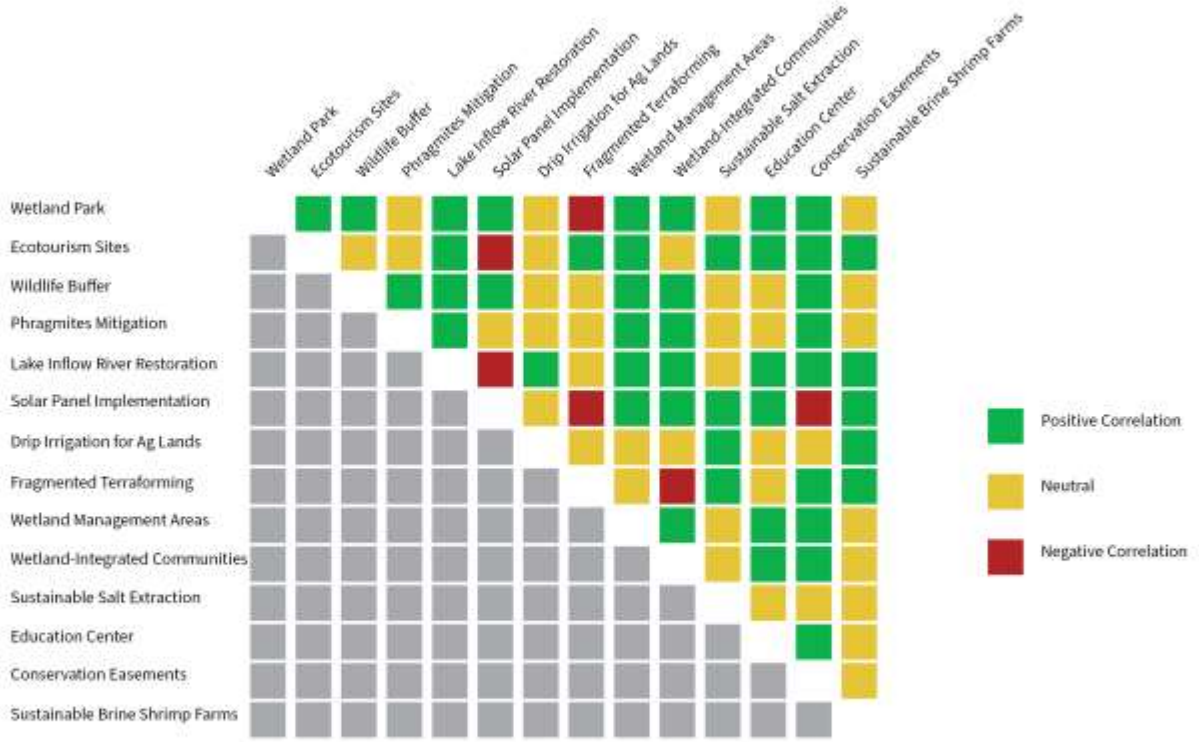
DEAD SEA

Dropping over 1 meter per year, the Dead Sea near Jerusalem is facing significant shoreline recession as river diversions decrease water inflow. This has brought reports of sinkholes and economic impacts. Efforts to improve the lake conditions have included water transfer from the Red Sea and ecotourism.

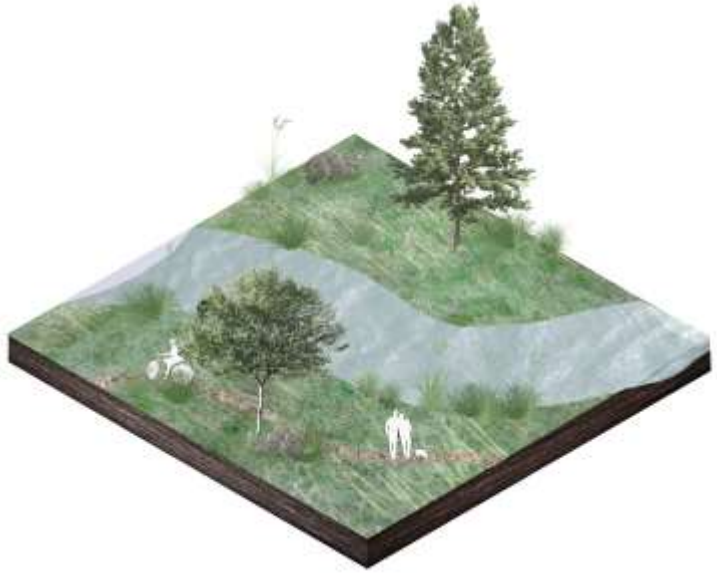
THE EXPERTS

MATRIX 1: COMPARING HAZARDS TO SOLUTIONS

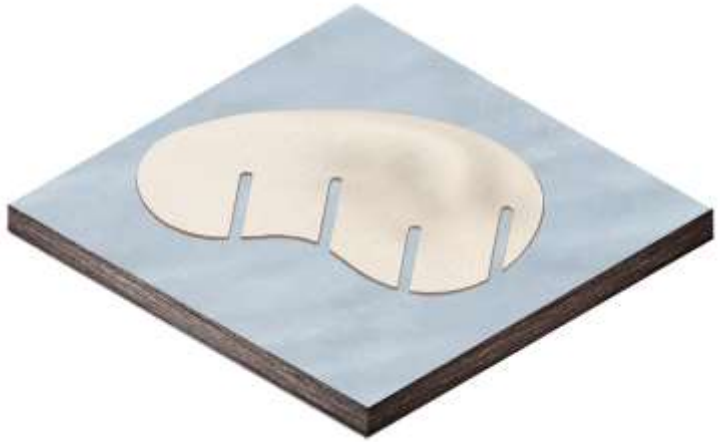
MATRIX 2: COMPARING SOLUTIONS TO SOLUTIONS



SOLUTIONS



Inflowing River Restoration



Terraforming

Wetland Park

NEXT STEPS

- Create a suitability analysis in GIS Modelbuilder to define where solutions will be located
- Visually represent solution ideas through isometric vignettes
- Contact participants for feedback on solution combinations and design vignettes
- Create master plan alternatives that each favor the economic, environmental, and economic identity

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LANDSCAPE ARCHITECTURE &
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THANK YOU

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